

## PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 45798.WO/ML	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB 03/05333	International filing date (day/month/year) 05.12.2003	Priority date (day/month/year) 05.12.2002
International Patent Classification (IPC) or both national classification and IPC G01N21/03		
Applicant E2V TECHNOLOGIES LIMITED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  02.07.2004	Date of completion of this report  14.03.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer  Navas Montero, E  Telephone No. +49 30 25901-632 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/05333**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-13 as originally filed

**Claims, Numbers**

1-19 as originally filed

**Drawings, Sheets**

1/16-16/16 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/05333**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 19

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 19

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	4, 5, 7-13, 16, 17
	No: Claims	1-3, 6, 14, 15, 18
Inventive step (IS)	Yes: Claims	
	No: Claims	1-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1** Reference is made to the following documents:  
D1: FR 2 767 195 A (COMMISSARIAT ENERGIE ATOMIQUE) 12 February 1999;  
D2: GB 2 349 207 A (SHIMADZU RESEARCH LAB) 25 October 2000;  
D3: US 3 465 147 A (BANVILLE BERTRAND J-R) 2 September 1969; and  
D4: US 5 604 587 A (CHE DIPING ET AL) 18 February 1997.
- 2** The **Independent claim 1** does not fulfill the requirements of novelty of **Article 33(2) PCT**.
  - 2.1** With respect to **claim 1** document D1 discloses a gas sensor comprising a body (cf. fig. 4), on which is mounted an optical source (410) and detector means (411) sensitive to light from the source, the body further comprising a channel arranged to admit gas (cf. page 18, lines 14 to 17)<sup>1</sup>, the channel comprising an elongated groove (cf. fig. 5) having reflective surfaces (54, 55) defining a folded optical path for light from the source (cf. page 16, lines 31 to 35).
- 3** **Dependent claims 2, 3, 6, 14, 15, and 18** are not novel within the meaning of **Article 33(2) PCT**. **Dependent claims 4, 5, 7 to 13, 16, and 17** are not inventive in the sense of **Article 33(3) PCT**.
  - 3.1** Document D1 further discloses the additional subject-matter of **claims: 2, 3, 6** (cf. fig. 4), **14, 15** (cf. page 20, lines 10 to 20; fig. 5), and **18** (cf. page 12, lines 11 to 14).
  - 3.2** Document D2 deals with the measurement of samples by conditioning the optical path. It, therefore, pertains to the relevant prior art. D2 discloses the redirection of a portion of light from a predetermined region in accordance with the additional subject-

---

<sup>1</sup>The openings 48 and 49 are simply arranged as entrance and exit gas ports. The channel comprises the whole cavity, which can also clearly be identified as an elongated groove. The presence of 48 and 49 in D1 leaves no doubt of the suitability of the groove disclosed in D1 for admitting a gas.

matter of **claim 4** (cf. page 14, lines 14 to 19; fig. 5).

- 3.3 The additional subject-matter of **claims 5, and 7 to 10** defines well-known alternatives to the arrangement a long optical path in a compact way disclosed in D1 (see e.g. documents D3 and D4), and cannot, therefore, be considered inventive.
- 3.4 The advantages derivable from a base accommodating source and detector in accordance with **claim 11** are well-known.
- 3.5 The additional subject-matter of **claims 12 and 13** deals with constructional features from which no special, unexpected technical effect can be identified.
- 3.6 The use of gas filtering means to avoid particulate contamination of the sensor as present in **claims 16 and 17** is considered routine in the art.